ARMY RESEARCH LABORATORY

Combinatorial Solid Geometry Target Description Standards

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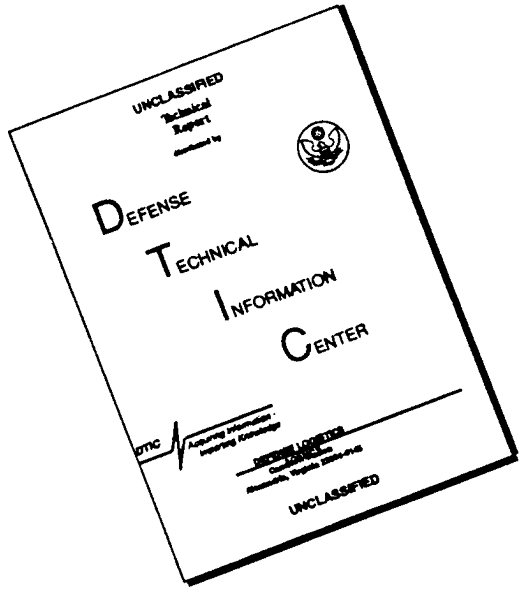

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The Ground Systems Branch of the U.S. Army Research Laboratory uses computerized geometric target description modeling of vehicles to support its vulnerability analyses. The target describer must follow certain guidelines to ensure a description's compatibility with various vulnerability models. This report presents the required standardization guidelines for target descriptions created in or translated into the BRL-CAD three-dimensional solid modeling system.

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1. INTRODUCTION

One of the missions of the Ballistic Vulnerability/Lethality Division (BVLD), Survivability/ Lethality Analysis Directorate (SLAD), U.S. Army Research Laboratory (ARL) is to conduct vulnerability analyses of combat systems. The Ground Systems Branch (GSB) of BVLD has the responsibility to perform vulnerability analyses on ground armored vehicles using computerized geometric descriptions. A combinatorial solid geometry (CSG) target description of the system being studied is required as input to the vulnerability models used in GSB. This target description must adhere to certain standards so the analyst can easily adapt the description to the vulnerability model. This report outlines the required guidelines for creating a standardized CSG target description of ground armored vehicles. These guidelines are provided so that the target descriptions received in GSB will be similarly built and compatible with the various vulnerability models used in GSB. ***The authors assume that the reader has prior knowledge of CSG techniques and terminology, BRL–CAD, and the Multi–Graphics EDitor (MGED).*** Detailed information on the CSG method can be found in Bain and Reisinger (1975); Kuehl, Bain, and Reisinger (1979); and Ellis (1992). Muuss (1991) provides information on BRL–CAD.

2. BACKGROUND

Previously, most target descriptions were created in relatively low detail and under the guidance of a vulnerability analyst. These descriptions were created in–house following an informal set of standards, and each target describer followed a basic description structure. This informal structure, known by the analyst, allowed for easy investigation of the target description and adaptation of the description to various vulnerability models used in GSB. Over the years, target descriptions have become more complex, and the demand for lethality analyses against a wider array of targets has increased. Consequently, a larger and more diverse group of describers (e.g., contractors and other government agencies) has been creating target descriptions. As a result, the analyst's ability to guide the development of the descriptions has deteriorated, leading to descriptions of a varied structure often unusable by the analyst. In fact, the target description may be completed before the analyst has access or input, which, in many instances, causes the description to no longer be easily interrogated by the analyst. Adapting descriptions to vulnerability models has become a laborious effort as many changes must be made to make the descriptions and the models compatible. Therefore, to decrease the amount of time and resources required to support a vulnerability analysis, the development of a formal set of target description standards has become necessary.

3. STANDARDIZATION OF TARGET DESCRIPTIONS

3.1 The Hierarchical Structure

When a target description is initiated, solids are combined into regions, and regions are then grouped into a hierarchical structure that represents a vehicle. To obtain this hierarchy, planning and forethought are needed to ensure that the structure of the description is easily understood by the diverse group of people who will utilize it. An understandable

structure is achieved if certain elements, such as solid and region names, units of measure, and coordinate systems are consistent throughout all target descriptions. The following sections present the fundamental elements needed to create a standardized target description, beginning at the solid level.

3.2 Coordinate System

A reference point (i.e., the origin) on the target must be defined. All target descriptions built by or for GSB will use the X,Y, Z right–handed coordinate system. The origin of a turreted vehicle is located at the intersection of the axis of turret rotation and the ground surface. The positive X axis points to the front of the vehicle, the positive Y axis points toward the vehicle's own left, and the positive Z axis points up. Figure 1 shows the coordinate system for a turreted vehicle.

Since the coordinate system refers to the axis of turret rotation, this policy does not suffice to specify the origin location for turretless vehicles. For these descriptions, a reasonable substitution has been made. The origin will be the intersection of the ground surface and a convenient point along the left–right midplane of the vehicle. The axes will point in the same direction as the axes for turreted vehicles. Figure 2 shows the coordinate system for a turretless vehicle. By choosing the origin in this manner, the target describer can take advantage of the symmetry of the vehicle.

3.3 Units of Measure

As a general rule, vulnerability models in GSB assume that the target descriptions are in millimeters. Although the MGED allows English or metric units of measure, converting between units may cause changes in the geometry due to round off. If the description is created using English units, the description should be converted to metric units before checking for overlaps and voids.

3.4 Naming Conventions

3.4.1 Solids

The hierarchical structure of the target description begins with the solid, which is the simplest element of solid geometry. A solid is defined as one of the basic geometric shapes or primitives available for CSG. The MGED primitives, or basic solid types, are listed in Table 1. All solid names should be suffixed with a ".s". For example, *lt.idler.hub.s* is indicative of the primary solid describing the left idler hub. Although POLYs, SPLs, and HALFs are available in the MGED, some vulnerability models do not currently accept them. Therefore, they should not be used when creating a description for a vulnerability analysis.

3.4.2 Regions

In the target description, a region, the space occupied by a solid or a combination of solids, represents an actual component of the vehicle. One should construct a coherent target description by creating meaningful region names that reflect the primary solid name and

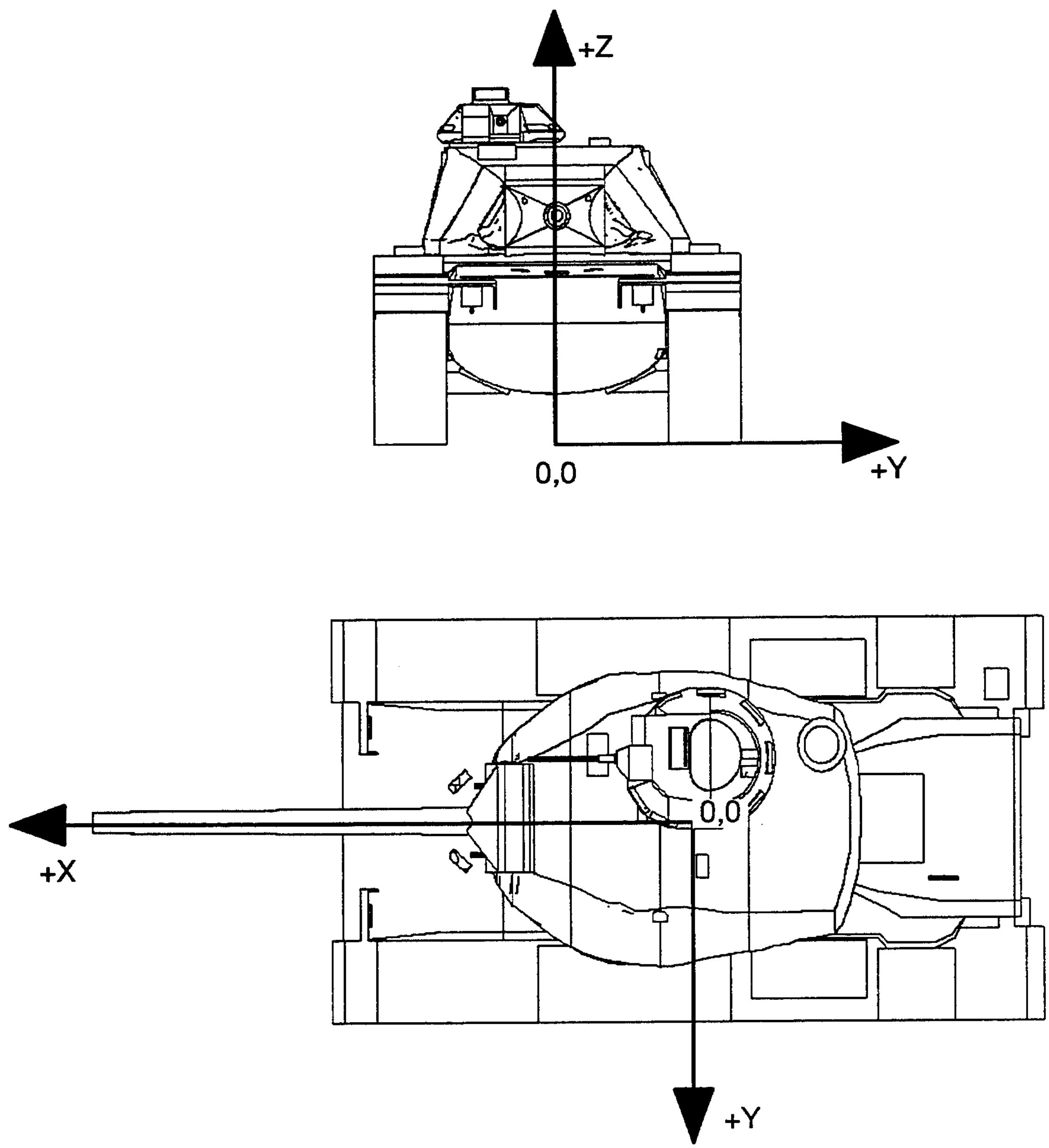

Figure 1. Coordinate Axes of a Turreted Vehicle.

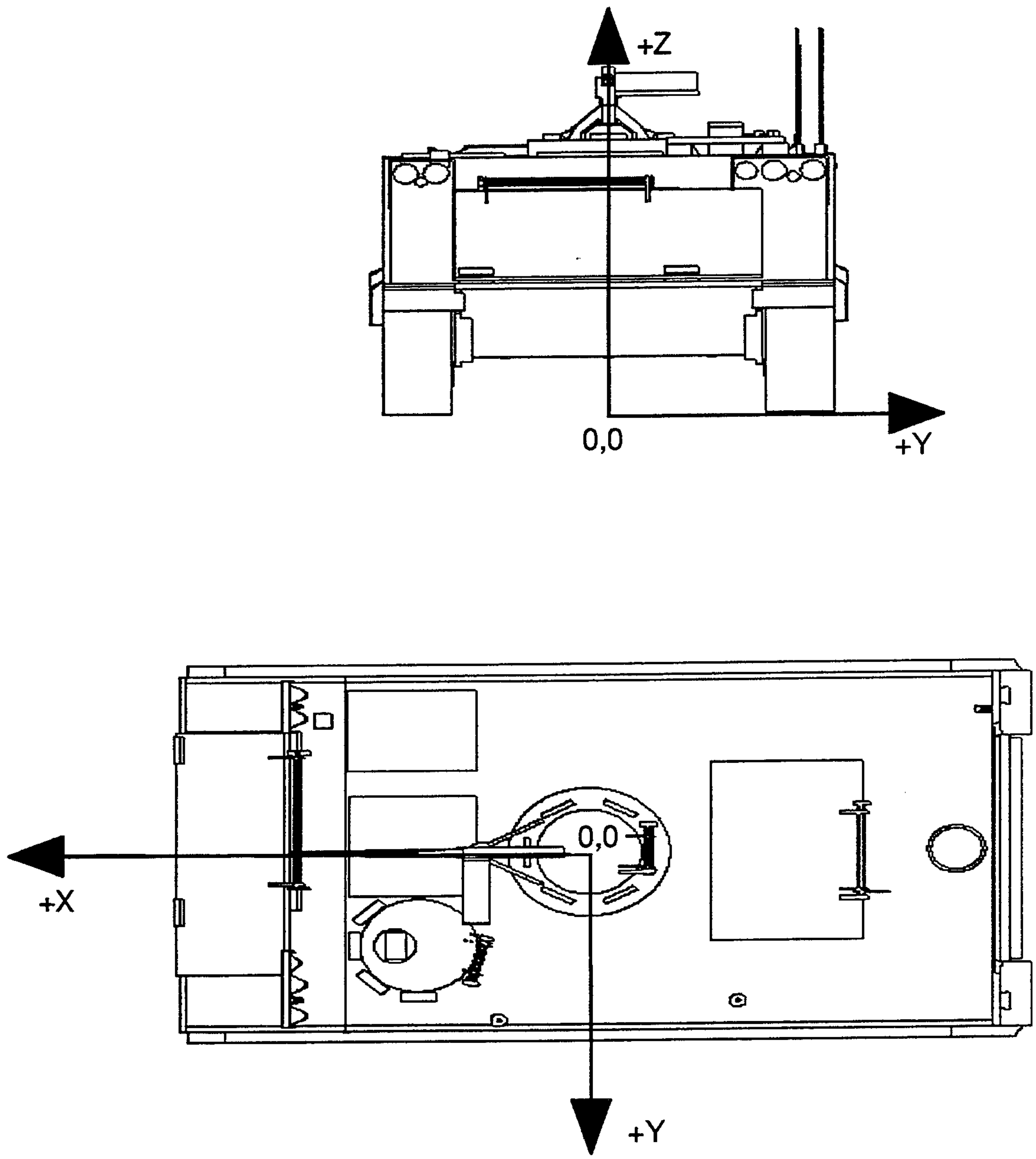

Figure 2. Coordinate Axes of a Turretless Vehicle.

suffix all region names with a ".r". For example, the region *lt.idler.hub.r* consists of the solid *lt.idler.hub.s*.

Suffixing solid and region names allows the target describer and analyst to easily interrogate a vehicle. For example, regions and solids with unique suffixes permit efficient global searching and text manipulation.

Table 1. Basic Solid Types

SYMBOL	NAME
ARS	ARBITRARY TRIANGULAR–SURFACED POLYHEDRON
ARB	ARBITRARY CONVEX POLYHEDRON
ELLG	GENERAL ELLIPSOID
POLY	POLYGONAL FACETED SOLID (DO NOT USE)
SPL	NONUNIFORM RATIONAL B-SPLINE (DO NOT USE)
TGC	TRUNCATED GENERAL CONE
TOR	TORUS
HALF	HALF SPACE (PLANE) (DO NOT USE)
RPP	RECTANGULAR PARALLELEPIPED
BOX	BOX
RAW	RIGHT ANGLE WEDGE
SPH	SPHERE
RCC	RIGHT CIRCULAR CYLINDER
REC	RIGHT ELLIPTICAL CYLINDER
TRC	TRUNCATED RIGHT CYLINDER
TEC	TRUNCATED ELLIPTICAL CYLINDER

3.4.3 Groups

A group is a collection of regions that represents a system within the actual vehicle (e.g., main gun, fuel system, and fuel tanks). Group names should be meaningful to enable the analyst to determine which components are contained within the group. For example, the group *lt.idler* could contain *lt.idler.hub.r, lt.idler.arm.r, lt.idler.rim.r* and *lt.idler.tire.r,* which are representative of the left idler.

Examples of groups of a sample target description are provided in section 3.8, Target Description Tree Structure.

3.4.4 Acceptable Characters

Throughout the target description building process, it is important for the describer to carefully select solid, region, and group names. The names should reflect the common names

of the components being described to allow for ease in interrogation of the target description. To facilitate keyboarding while interrogating the description, names should be created exclusively from the following list of characters.

- a–z (lower case)
- 0–9
- . (dot)
- – (dash).

Special characters, other than the dot and dash, are not acceptable, as they can cause the various vulnerability models to fail.

3.4.5 Maximum Name Length

Name length of solids, regions, and groups should be limited to no more than 15 characters. The MGED can accommodate individual node names of 16 characters; however, some vulnerability models cannot and may truncate the 16th character.

3.5 Geometry Methodology

3.5.1 Region Formulation

Solids are combined into regions using three logic operations: intersection (+), difference (–), and union (u). The maximum number of logic operations used to formulate a region should not exceed 100. The MGED cannot evaluate a region defined by more than 100 operations; consequently, the target describer cannot interactively visualize the result of the operations with the "E" command.

Logic operations should not be performed using regions (e.g., *region1.r* u *solid1.s* – *region2.r*). While the MGED can accommodate such operations, not all vulnerability models can; therefore, logic operations should be performed only using solids (e.g., *region1.r* u *solid1.s* – *solid2.s*).

3.5.2 Component Formulation

Each component of a vehicle is described as a single region or a group of regions in the description. Selected regions are then grouped to represent systems of the actual vehicle. This methodology will allow for an accurate analysis of the vehicle.

When the armor of the vehicle is created from several types of material, each element of the armor package should be described and uniquely identified. The armor package should then be grouped to include all the elements of the armor.

If a region or group of regions is translated, the region(s) should be pushed to move all translations to the solid level. The geometry of the vehicle will then be based at the solid level, which allows for easier editing of the target description.

Instancing should not be used when creating components, since currently, the use of instances does not allow for unique identification of regions. Regions must be uniquely identified for vulnerability models to produce correct results.

When describing components containing other elements, such as fuel lines and water lines, consideration must be given to assure that the components are modeled similar to the actual components. These components can be modeled two ways. Either the exterior surface and the interior are both described separately to represent the components; or the exterior surface is described as one solid component, with the effective percentage modified to represent the density of the exterior surface containing the interior elements. The components should never be modeled as the interior elements only, as this may lead to false vulnerability results due to the lack of masking in the target description.

Ammunition with sufficiently large diameter, currently greater than 30 mm, should be described explicitly to include the exterior casing and the interior explosive components. With the explosive component described, the analyst can more correctly determine the reaction caused by the impact of a penetrator on the ammunition.

When exterior components of the vehicle extend into interior space (e.g., vision blocks and gun tube) the exterior and interior portions should be described separately and explicitly. This is critical for a compartment–level vulnerability analysis because all interior components, except crew, fuel, and ammunition, are implicitly incorporated through empirically based curves. If interior and exterior portions of a critical component are not described separately, then the component's contribution to the loss–of–function (LOF) may be double–counted.

3.5.3 Overlaps

A law of physics states that no two objects can occupy the same space at the same time. A slightly revised version of this law holds true for target descriptions: no two regions should overlap. Various tools, such as rtcheck in the MGED, must be used to check for overlapping. Checks for overlaps should be processed using a small tolerance (0.3–mm overlap and 50–mm cell size) at various aspect angles to ensure that no overlaps exist. The minimum azimuths that should be processed are 0°, 30°, 60°, 90°, 120°, 150°, 180°, 210°, 240°, 270°, 300°, and 330°. The minimum elevations that should be processed for each azimuth are 0°, 30°, 45°, and 60°, as well as one azimuth at 90° elevation.

3.5.4 Contour Geometry

The use of the ARS solid is recommended for contour geometry because it is more efficient than a series of ARBs, from both a creation and a maintenance standpoint. Contoured components are usually measured by recording a series of water lines, and the points recorded on these water lines are precisely what is needed to characterize an ARS. The ARS enables the describer to create a continuous solid, whereas the use of multiple ARBs introduces the possibility of creating gaps in the target description where each ARB meets an adjacent ARB. If the component is large, such as a turret, the use of ARBs can also inadvertently lead to the previously mentioned problem of having more than 100 operations in a region (refer to section 3.5.1). Each of these ARBs must be included in a region by the union operation. The ARS solid is the more compact contour geometry representation, which allows easier geometric maintenance and modification. The target describer can edit the ARS solid with the MGED using the "in" command. Figure 3 shows an example of an ARS turret.

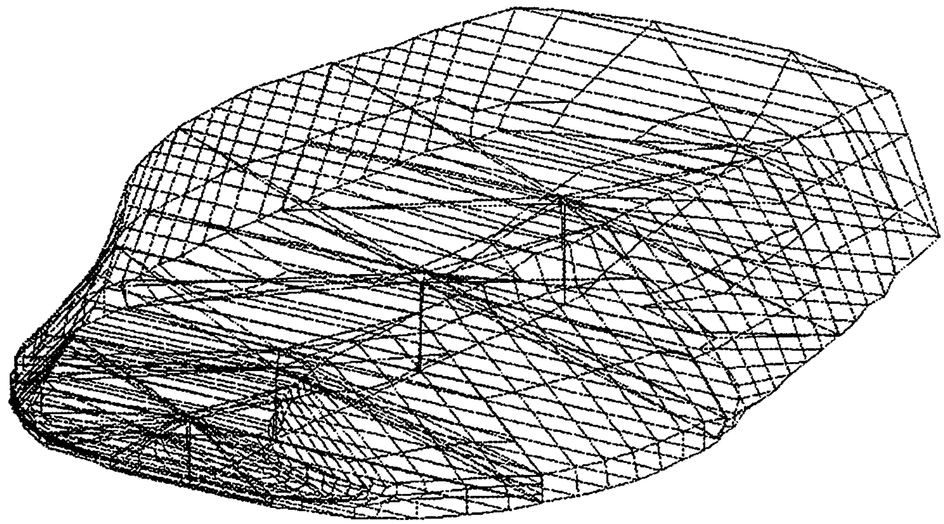

Figure 3. ARS Turret.

3.6 Region Characteristics

3.6.1 Region Identification Number

Each region that represents a material component of a vehicle is given a unique name and a region identification (ID) number. Also, each region is assigned a region number by the MGED. ID numbers are used by the vulnerability model to identify the components of the target description. One result of a vulnerability analysis might be a list of all the ID numbers in the target description representing components that were impacted by the projectile or by spall or by both. This list contains only the ID numbers and not the descriptive region name given to the components. To determine which components were impacted, the analyst must, for a given shot, look up the ID numbers in the region ID table of the target description. This problem can be alleviated to some degree if the target description is separated into systems that are identified by a distinctive range of ID numbers. For example, the components belonging to the fuel system should be given ID numbers in the range 2000 to 2999. Then the analyst can quickly identify, without referring to the region ID table, that any ID number in the 2000 series would be a representation of a component that is part of the fuel system. This can save the analyst a significant amount of time when a large number of shotlines is being reviewed and no further identification of the components is required. ID numbers 111 and 9999 are reserved numbers used by several vulnerability codes and should not be assigned to regions in the target description. Each main system of a vehicle is listed in Table 2 along with the associated range of ID numbers. When needed, the ID numbers can be multiplied by a factor of 10 for target descriptions with greater than 9998 unique regions.

3.6.2 Material Code and Effective Percentage

Each region is also assigned a material code and an effective percentage to allow it to emulate the properties of the component. Regions with identical ID numbers must also have

Table 2. Region ID Associations for Target Descriptions

20–199 CREW/PASSENGERS *

1000–1999 ARMOR STRUCTURE
- 1000–1499 HULL ARMOR STRUCTURE
- 1500–1999 TURRET ARMOR STRUCTURE

2000–2999 FUEL SYSTEM

3000–3999 ARMAMENT (GUNS, AMMO, AMMO STORAGE, . . .)

4000–4999 ENGINE, DRIVETRAIN, DRIVER CONTROLS

5000–5999 SUSPENSION, WHEEL/TRACK

6000–6999 ELECTRICAL, HYDRAULICS, COMMUNICATIONS
- 6000–6499 HULL ELECTRICAL, HYDRAULICS, COMMUNICATIONS
- 6500–6999 TURRET ELECTRICAL, HYDRAULICS, COMMUNICATIONS

7000–7999 FIRECONTROL, COMPUTERS
- 7000–7499 HULL FIRECONTROL, COMPUTERS
- 7500–7999 TURRET FIRECONTROL, COMPUTERS

8000–8999 EXTERIOR MISCELLANEOUS
- 8000–8499 HULL EXTERIOR MISCELLANEOUS
- 8500–8999 TURRET EXTERIOR MISCELLANEOUS

9000–9998 INTERIOR MISCELLANEOUS
- 9000–9499 HULL INTERIOR MISCELLANEOUS
- 9500–9998 TURRET INTERIOR MISCELLANEOUS *

*Do Not Use 111 or 9999

the same material code and effective percentage. This is necessary because the vulnerability models associate one material code and effective percentage with each ID number. If different regions with the same ID number have different material codes or different effective percentages, then some of the regions would not be represented correctly in the vulnerability model. The material codes and associated densities required for compatibility with the vulnerability models of BVLD are listed in Table 3.

3.6.3 Air Component Identification

The interior of a vehicle may be separated into several compartments, such as crew, engine, and passenger. Most BVLD vulnerability models require that this internal space contain continuous regions of air because the vulnerability models use the air component to determine, for a given shotline, when a penetrator enters and exits the interior of the vehicle. The interior air component is also used to determine which interior compartment the penetrator has entered. Since the compartment model at BVLD determines vehicle LOF based mainly on parametric curves associated with each compartment, all internal space must be filled with the appropriate type of air. Interior air must be contained within the armored structure of the vehicle. When the vehicle is designed with valid openings, such as gun ports, open hatches, and grills, then the use of "phantom" armor is necessary. A "thin" plate (0.3 mm) of mild steel (material 1) with an effective percentage of one is modeled to provide a boundary for exposed air. Each compartment is identified by name and air code in Table 4.

The region number, ID number, air code, material code, effective percentage, and unique name are combined to create the region identification table. An example of this table is shown in the Appendix.

3.7 Critical Components

In vulnerability models, the reduction of the vehicle's ability to perform a mission function can be determined by the compartment perforated and by damage to components that are considered critical. For the compartment–level vulnerability model to accurately determine the LOF of a vehicle, certain components must be included in the description (see Table 5).

The component–level vulnerability model requires the target description to contain the compartment–level critical components as well as other components that, when damaged, cause vehicle LOF. For example, a hydraulic line to the main gun would be considered critical because a firepower LOF would occur if it were severed. A criticality analysis is performed on the vehicle to determine the critical components of a component–level target description. Van Dusen, et al. (1989) contains an example of a criticality analysis.

3.8 Target Description Tree Structure

Once the components of the vehicle are described, they should be placed into a tree structure which will allow for easy interrogation of the target description. Similar systems should be grouped together as should subsystems within systems. The top level of the description

Table 3. Material Identification

MATERIAL CODE	SPECIFIC GRAVITY	MATERIAL
1	7.7641	MILD STEEL
2	7.7641	ROLLED HOMOGENEOUS ARMOR
3	7.7641	FACE-HARDENED STEEL ARMOR
4	7.2038	CAST IRON
5	2.7695	ALUMINUM 2024
6	1.7930	MAGNESIUM
7	8.9007	COPPER
8	10.9978	LEAD
9	4.4824	TITANIUM
10	18.6819	TUBALLOY
11	0.7444	NYLON, UNBONDED
12	0.9285	NYLON, BONDED
13	1.1990	LEXAN
14	1.2166	PLEXIGLASS, CAST
15	1.2166	PLEXIGLASS, STRETCHED
16	2.0011	DORON
17	2.4653	GLASS
18	0.9356	RUBBER
19	0.6500	WOOD, HARD
20	1.0000	WATER
21	0.9024	OIL, LUBE OR HYDRAULIC
22	0.7972	FUEL, DIESEL
23	1.6900	PROPELLANT
24	1.6500	HIGH EXPLOSIVE
25	0.6809	GASOLINE
26	1.3200	FIBERGLASS
27	0.0803	FOAM RUBBER
28	1.0990	PERSONNEL
29	1.2000	RADIATION SHIELDING MATERIAL
30	19.3000	TUNGSTEN
31	2.7695	ALUMINUM ARMOR 5083
32	2.7695	ALUMINUM ARMOR 7093
33	2.7695	ALUMINUM ARMOR, OTHER
34	1.4917	CANVAS
35	0.0001	CERAMIC ARMOR
36	0.1900	CELOTEX
37	2.4500	BORON
38	0.9300	POLYETHYLENE/KEVLAR
39	1.3000	RED FUMING NITRIC ACID
40	18.7000	URANIUM
41	–.——	SPECIAL ARMOR

Table 4. Air Code Associations for Target Descriptions

AIR CODE	NAME
01	OUTSIDE/GUN TUBE
02	CREW
05	ENGINE
07	PASSENGER
Do not use 09	

Table 5. Required Components (Compartment Model)

EXTERIOR ARMOR	
INTERIOR AIRSPACE	
CREW/PASSENGERS	
FUEL	
EXTERIOR MAIN GUN TUBE	
AMMUNITION	
SUSPENSION	
TRACKED VEHICLES	**WHEELED VEHICLES**
TRACK	TIRE
IDLER HUB	WHEEL
IDLER FLANGE	HUB
DRIVE HUB	
DRIVE FLANGE	
FRONT HUB	
FRONT FLANGE	
REAR HUB	
REAR FLANGE	

indicates the level of detail. If the top level is *compartment,* then the target description is detailed to compartment level. If the top level is *component,* then the target description is detailed to component level. The top level is then divided into major systems, such as *hull, turret, suspension,* and *air,* depending on the vehicle being described. Each of these major systems is then divided into smaller, similar systems such as *hull.int* and *hull.ext.* An example of the tree structure for a compartment-level tank target description is shown in Figure 4.

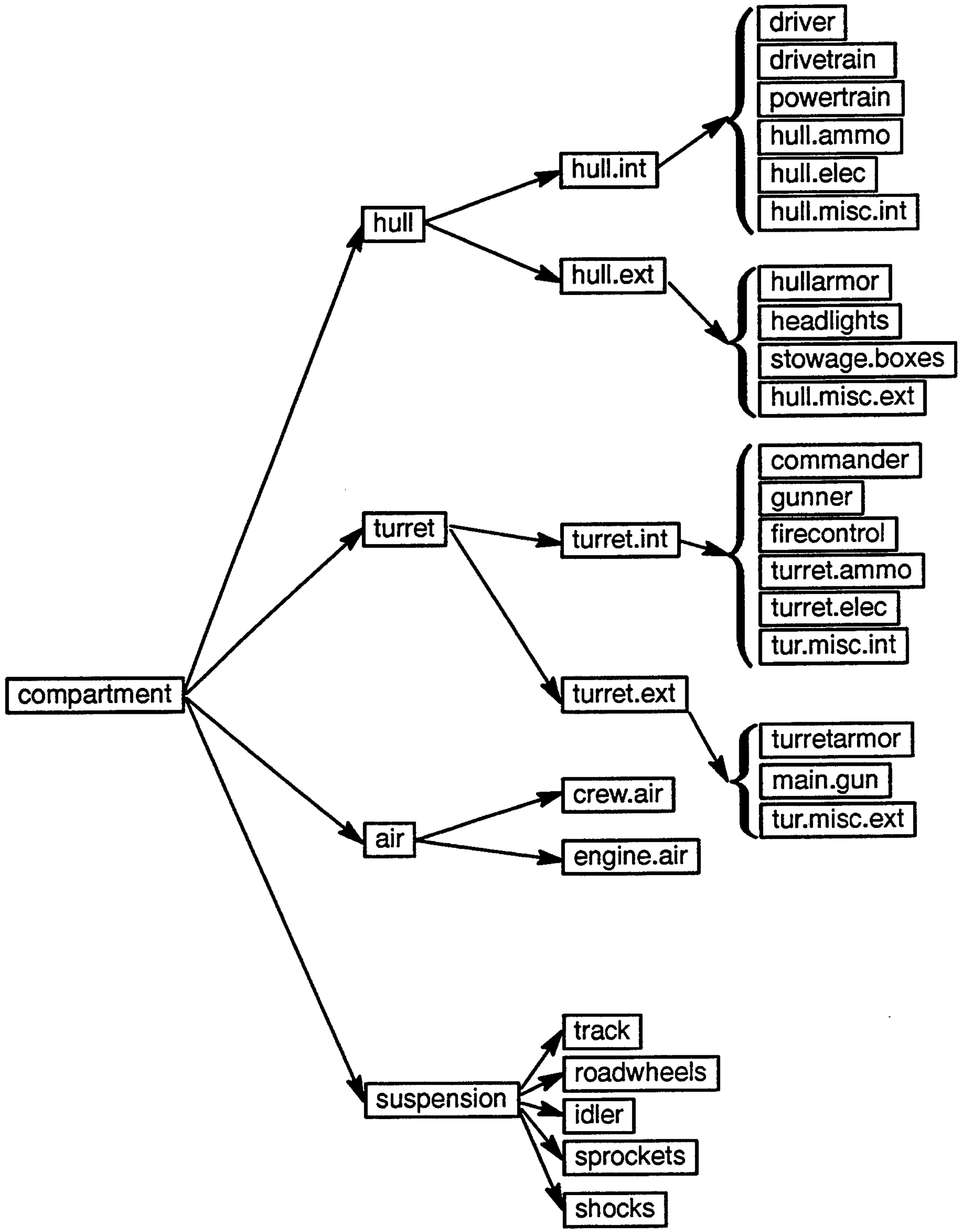

Figure 4. Example of a Tank Target Description Tree Structure.

3.9 Target Description Colors

When displaying many components of a target description, it is often difficult to visually differentiate between the systems of the vehicle. Therefore, as an aid to the analyst, each of the systems can be assigned a characteristic display color. Recommended color values are listed in Table 6. The color of the MGED window, which is usually black, should not be used.

Table 6. Subsystem Color Values

SUBSYSTEM	COLOR	RGB VALUE
CREW/PASSENGER	TAN	200 150 100
EXTERIOR ARMOR	GREY	80 80 80
FUEL SYSTEM	YELLOW	255 255 0
ARMAMENT (NOT AMMUNITION)	GREY	80 80 80
PROPELLANT	MAGENTA	255 0 255
PROJECTILES	RED	255 0 0
ENGINE	BLUE	0 0 255
OIL LINES/HOSES	LIGHT BROWN	159 159 95
COOLANT LINES/HOSES	GREEN	0 255 0
AIR LINES/HOSES	BLUE	0 0 255
DRIVETRAIN	CYAN	0 255 255
DRIVER CONTROLS	DARK BLUE	50 0 175
SUSPENSION	GREY	80 80 80
ELECTRICAL	FOREST GREEN	50 145 20
HYDRAULICS	PINK	255 145 145
COMMUNICATIONS	LIME GREEN	50 204 50
FIRECONTROL	PEACH	234 100 30
FIRE SUPPRESION	DARK RED	79 47 47
MISCELLANEOUS	ORANGE	204 50 50

4. SUMMARY

Required guidelines have been developed to standardize CSG target descriptions provided by or for GSB/BVLD of SLAD/ARL. Compliance with the standardization process will ensure that target descriptions generated in the future will be compatible with the vulnerability models used in GSB of BVLD. This will lead to more efficient production of vulnerability and lethality analyses for the U.S. Army.

5. STANDARDIZED TARGET DESCRIPTION CHECKLIST

To easily adapt a target description to the vulnerability models used in GSB, the following minimum requirements must be met.

- ☐ The target description must be started at a standard reference point (section 3.2).
- ☐ The target description must be completed and checked for voids and overlaps in millimeters (section 3.3).
- ☐ Solids, regions, and groups should have meaningful and descriptive names composed from the set of appropriate characters. Solid and region names must be suffixed by .s or .r, respectively. The length of the names should not exceed 15 characters (section 3.4).
- ☐ Logic operations must be performed only on solids and no more than 100 logic operations per region (section 3.5).
- ☐ No region overlaps must be contained in the target description (section 3.5).
- ☐ Large contoured components should be created using ARSs (section 3.5).
- ☐ The region ID numbers of vehicle systems must follow the set range of ID numbers (section 3.6).
- ☐ The region material and air codes must follow the standard list of codes (section 3.6).
- ☐ Region identification groups must be homogeneous. When different regions are assigned the same ID number, the material and effective percentage of each region must be identical (section 3.6).
- ☐ All interior volume must be modeled either as air or material components (section 3.6).
- ☐ A thin plate of "phantom armor" (0.3 mm of mild steel, effective percentage of one) is modeled over valid openings to provide a boundary for exposed air (section 3.6).
- ☐ The target description must contain critical components appropriate for the level of detail of the analysis being performed (section 3.7).
- ☐ The tree structure of the target description should follow the recommended guidelines (section 3.8).

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APPENDIX:

EXAMPLE OF A REGION IDENTIFICATION TABLE

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REGION NUMBER	ID NUMBER	AIR CODE	MATERIAL CODE	EFFECTIVE PERCENTAGE	REGION NAME
17	0	1	0	0	/compartment/air/gun.air/main.gun.air.r:
18	0	1	0	0	/compartment/air/gun.air/mg.air.r:
19	0	2	0	0	/compartment/air/crew.air/turret.air/tur.air.r:
20	0	2	0	0	/compartment/air/crew.air/turret.air/tur.ring.air.r:
21	0	2	0	0	/compartment/air/crew.air/turret.air/tur.trun.air.r:
22	0	2	0	0	/compartment/air/crew.air/crew.hull.air/hull.mid.air.r:
23	0	2	0	0	/compartment/air/crew.air/crew.hull.air/hull.tur.air.r:
24	0	2	0	0	/compartment/air/crew.air/crew.hull.air/hull.glac.air.r:
25	0	2	0	0	/compartment/air/crew.air/crew.hull.air/air.sliver.r:
26	0	2	0	0	/compartment/air/crew.air/crew.hull.air/air.fill.r:
27	0	2	0	0	/compartment/air/crew.air/crew.hull.air/air.fill2.r:
28	0	2	0	0	/compartment/air/crew.air/crew.hull.air/air.fill6.r:
29	0	2	0	0	/compartment/air/crew.air/crew.hull.air/air.fill11.r:
30	0	2	0	0	/compartment/air/crew.air/crew.hull.air/air.fill7.r:
31	0	2	0	0	/compartment/air/crew.air/crew.hull.air/air.fill8.r:
32	0	2	0	0	/compartment/air/crew.air/crew.hull.air/air.fill3.r:
33	0	2	0	0	/compartment/air/crew.air/crew.hull.air/air.fill12.r:
34	0	2	0	0	/compartment/air/crew.air/cupola.air/cup.wpn.air.r:
35	0	2	0	0	/compartment/air/crew.air/cupola.air/cup.ring.air.r:
36	0	2	0	0	/compartment/air/crew.air/cupola.air/air.fill5.r:
37	0	2	0	0	/compartment/air/crew.air/cupola.air/air.fill9.r:
38	0	2	0	0	/compartment/air/crew.air/cupola.air/cup.int.air1.r:
39	0	2	0	0	/compartment/air/crew.air/cupola.air/cup.int.air2.r:
40	0	2	0	0	/compartment/air/crew.air/cupola.air/cup.int.air3.r:
6	0	5	0	0	/compartment/air/engine.air/cent.air.r:
7	0	5	0	0	/compartment/air/engine.air/rt.flare.air.r:
8	0	5	0	0	/compartment/air/engine.air/lf.eng.air.r:
9	0	5	0	0	/compartment/air/engine.air/lf.flare.air.r:
1	0	5	0	0	/compartment/air/engine.air/exhaust.air/exhaust.air.r:
10	0	5	0	0	/compartment/air/engine.air/rt.eng.air/rt.eng.air.0.r:
11	0	5	0	0	/compartment/air/engine.air/rt.eng.air/rt.eng.air.1.r:
12	0	5	0	0	/compartment/air/engine.air/rt.eng.air/rt.eng.air.2.r:
13	0	5	0	0	/compartment/air/engine.air/rt.eng.air/rt.eng.air.3.r:
14	0	5	0	0	/compartment/air/engine.air/eng.top.air.r:
15	0	5	0	0	/compartment/air/engine.air/eng.top1.air.r:
16	0	5	0	0	/compartment/air/engine.air/lt.low.air.r:
2	0	5	0	0	/compartment/air/engine.air/eng.deck.air/cen.deck.air.r:
3	0	5	0	0	/compartment/air/engine.air/eng.deck.air/lt.deck.air.r:
4	0	5	0	0	/compartment/air/engine.air/eng.deck.air/rt.deck.air.r:
5	0	5	0	0	/compartment/air/engine.air/rt.low.air.r:
313	20	0	28	100	/compartment/turret/turret.int/turret.crew/commander/com.head.r:
314	21	0	28	100	/compartment/turret/turret.int/turret.crew/commander/com.should.r:
315	22	0	28	100	/compartment/turret/turret.int/turret.crew/commander/com.arms.r:
316	23	0	28	100	/compartment/turret/turret.int/turret.crew/commander/com.up.torso.r:
317	24	0	28	100	/compartment/turret/turret.int/turret.crew/commander/com.lo.torso.r:
318	25	0	28	100	/compartment/turret/turret.int/turret.crew/commander/com.legs.r:
187	30	0	28	100	/compartment/hull/hull.int/hull.crew/driver/dr.head.r:

REGION NUMBER	ID NUMBER	AIR CODE	MATERIAL CODE	EFFECTIVE PERCENTAGE	REGION NAME
188	31	0	28	100	/compartment/hull/hull.int/hull.crew/driver/dr.should.r:
191	32	0	28	100	/compartment/hull/hull.int/hull.crew/driver/dr.arms.r:
189	33	0	28	100	/compartment/hull/hull.int/hull.crew/driver/dr.up.torso.r:
190	34	0	28	100	/compartment/hull/hull.int/hull.crew/driver/dr.lo.torso.r:
192	35	0	28	100	/compartment/hull/hull.int/hull.crew/driver/dr.legs.r:
325	40	0	28	100	/compartment/turret/turret.int/turret.crew/loader/ldr.head.r:
326	41	0	28	100	/compartment/turret/turret.int/turret.crew/loader/ldr.should.r:
327	42	0	28	100	/compartment/turret/turret.int/turret.crew/loader/ldr.arms.r:
328	43	0	28	100	/compartment/turret/turret.int/turret.crew/loader/ldr.up.torso.r:
329	44	0	28	100	/compartment/turret/turret.int/turret.crew/loader/ldr.lo.torso.r:
330	45	0	28	100	/compartment/turret/turret.int/turret.crew/loader/ldr.legs.r:
319	50	0	28	100	/compartment/turret/turret.int/turret.crew/gunner/gun.head.r:
320	51	0	28	100	/compartment/turret/turret.int/turret.crew/gunner/gun.should.r:
321	52	0	28	100	/compartment/turret/turret.int/turret.crew/gunner/gun.arms.r:
322	53	0	28	100	/compartment/turret/turret.int/turret.crew/gunner/gun.up.torso.r:
323	54	0	28	100	/compartment/turret/turret.int/turret.crew/gunner/gun.lo.torso.r:
324	55	0	28	100	/compartment/turret/turret.int/turret.crew/gunner/gun.legs.r:
219	1000	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.side/rt.side.10.r:
242	1000	0	1	100	/compartment/hull/hull.ext/hull.armor/lo.glacis.r:
243	1001	0	1	100	/compartment/hull/hull.ext/hull.armor/hi.glacis.r:
220	1005	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.side/rt.side.11.r:
221	1005	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.side/rt.side.12.r:
222	1005	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.side/rt.side.0.r:
223	1005	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.side/rt.side.1.r:
224	1005	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.side/rt.side.2.r:
225	1005	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.side/rt.side.3.r:
226	1005	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.side/rt.side.4.r:
227	1005	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.side/rt.side.5.r:
228	1005	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.side/rt.side.6.r:
229	1005	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.side/rt.side.7.r:
230	1005	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.side/rt.side.8.r:
231	1005	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.side/rt.side.9.r:
232	1015	0	1	100	/compartment/hull/hull.ext/hull.armor/lt.side/lt.side.0.r:
233	1015	0	1	100	/compartment/hull/hull.ext/hull.armor/lt.side/lt.side.1.r:
234	1015	0	1	100	/compartment/hull/hull.ext/hull.armor/lt.side/lt.side.2.r:
235	1015	0	1	100	/compartment/hull/hull.ext/hull.armor/lt.side/lt.side.3.r:
236	1015	0	1	100	/compartment/hull/hull.ext/hull.armor/lt.side/lt.side.4.r:
237	1015	0	1	100	/compartment/hull/hull.ext/hull.armor/lt.side/lt.side.5.r:
238	1015	0	1	100	/compartment/hull/hull.ext/hull.armor/lt.side/lt.side.6.r:
239	1015	0	1	100	/compartment/hull/hull.ext/hull.armor/lt.side/lt.side.7.r:
240	1015	0	1	100	/compartment/hull/hull.ext/hull.armor/lt.side/lt.side.8.r:
241	1015	0	1	100	/compartment/hull/hull.ext/hull.armor/lt.side/lt.side.9.r:
256	1020	0	1	100	/compartment/hull/hull.ext/hull.armor/hull.rear.r:
244	1100	0	1	100	/compartment/hull/hull.ext/hull.armor/eng.deck.r:
245	1101	0	1	100	/compartment/hull/hull.ext/hull.armor/hull.mid.r:
255	1102	0	1	100	/compartment/hull/hull.ext/hull.armor/deck.panel.r:
248	1105	0	1	100	/compartment/hull/hull.ext/hull.armor/ring.housing.r:
246	1110	0	1	100	/compartment/hull/hull.ext/hull.armor/lt.bottom.r:

REGION NUMBER	ID NUMBER	AIR CODE	MATERIAL CODE	EFFECTIVE PERCENTAGE	REGION NAME
247	1120	0	1	100	/compartment/hull/hull.ext/hull.armor/rt.bottom.r:
249	1200	0	1	100	/compartment/hull/hull.ext/hull.armor/eng.grills/lt.grill.r:
250	1201	0	1	100	/compartment/hull/hull.ext/hull.armor/eng.grills/rt.grill.r:
251	1202	0	1	100	/compartment/hull/hull.ext/hull.armor/eng.grills/exhaust.grill.r:
252	1300	0	1	100	/compartment/hull/hull.ext/hull.armor/eng.bulkhead/eng.bulk.lo.r:
253	1301	0	1	100	/compartment/hull/hull.ext/hull.armor/eng.bulkhead/eng.bulk.up.r:
254	1302	0	1	100	/compartment/hull/hull.ext/hull.armor/eng.bulkhead/eng.rim.bulk.r:
396	1500	0	1	100	/compartment/turret/turret.ext/tur.armor/tur.sect1.r:
395	1501	0	1	100	/compartment/turret/turret.ext/tur.armor/tur.sect2.r:
394	1502	0	1	100	/compartment/turret/turret.ext/tur.armor/tur.sect3.r:
393	1503	0	1	100	/compartment/turret/turret.ext/tur.armor/tur.sect4.r:
392	1504	0	1	100	/compartment/turret/turret.ext/tur.armor/tur.sect5.r:
397	1510	0	1	100	/compartment/turret/turret.ext/tur.armor/gun.shield/shield.frnt.r:
398	1511	0	1	100	/compartment/turret/turret.ext/tur.armor/gun.shield/shield.rear.r:
400	1515	0	1	100	/compartment/turret/turret.ext/tur.armor/gun.trunion.r:
399	1520	0	1	100	/compartment/turret/turret.ext/tur.armor/turret.ring.r:
405	1700	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect1/cup1.r:
406	1700	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect1/cup2.r:
407	1700	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect1/cup3.r:
408	1700	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect1/cup4.r:
409	1700	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect1/cup5.r:
410	1700	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect1/cup6.r:
411	1700	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect1/cup7.r:
412	1700	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect1/cup8.r:
413	1700	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect1/cup9.r:
414	1701	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect2/cup10.r:
415	1701	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect2/cup11.r:
416	1701	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect2/cup12.r:
417	1701	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect2/cup13.r:
418	1701	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect2/cup14.r:
419	1701	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect2/cup16.r:
420	1701	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect2/cup17.r:
421	1701	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect2/cup18.r:
422	1701	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect2/cup19.r:
423	1701	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect2/cup15a.r:
424	1702	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect3/cup20.r:
425	1702	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect3/cup21.r:
426	1702	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect3/cup22.r:
427	1702	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect3/cup23.r:
428	1702	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect3/cup24.r:
429	1702	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect3/cup25.r:
430	1702	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect3/cup26.r:
431	1702	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect3/cup27.r:
432	1702	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect3/cup28.r:
433	1702	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect3/cup29.r:
434	1702	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect3/cup30.r:
435	1702	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect3/cup31.r:
436	1703	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect4/cup32.r:

REGION NUMBER	ID NUMBER	AIR CODE	MATERIAL CODE	EFFECTIVE PERCENTAGE	REGION NAME
437	1703	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect4/cup33.r:
438	1703	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect4/cup34.r:
439	1703	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect4/cup35.r:
440	1703	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect4/cup36.r:
441	1703	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect4/cup37.r:
442	1703	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect4/cup38.r:
443	1704	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect5/cup39.r:
444	1704	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect5/cup40.r:
445	1704	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect5/cup41.r:
446	1704	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect5/cup42.r:
447	1704	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect5/cup43.r:
448	1704	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect5/cup44.r:
449	1704	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect5/cup45.r:
452	1705	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cup.frt.sect6.r:
402	1706	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.rear/cup.top.rear.r:
401	1707	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.rear/cup.mid.rear.r:
403	1708	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.rear/cup.bot.rear.r:
404	1800	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.rear/chtch.brkt.r:
450	1801	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cel.mech.brk.r:
451	1803	0	1	100	/compartment/turret/turret.ext/cupola.armor/cup.frt/cscp.cvr.r:
453	1810	0	1	100	/compartment/turret/turret.ext/cupola.armor/comm.hatch/hatch.rear.r:
454	1811	0	1	100	/compartment/turret/turret.ext/cupola.armor/comm.hatch/hatch.frt.r:
455	1820	0	1	100	/compartment/turret/turret.ext/cupola.armor/cupola.ring/ring.inner.r:
456	1821	0	1	100	/compartment/turret/turret.ext/cupola.armor/cupola.ring/ring.outer.r:
48	2000	0	1	10	/compartment/hull/hull.int/powertrain/fuel.system/fuel.tanks/lt.fuel.tank/lt.tank.0.r:
49	2000	0	1	10	/compartment/hull/hull.int/powertrain/fuel.system/fuel.tanks/lt.fuel.tanklt.tank.1.r:
50	2000	0	1	10	/compartment/hull/hull.int/powertrain/fuel.system/fuel.tanks/lt.fuel.tank/lt.tank.2.r:
51	2000	0	1	10	/compartment/hull/hull.int/powertrain/fuel.system/fuel.tanks/lt.fuel.tank/lt.tank.6.r:
52	2000	0	1	10	/compartment/hull/hull.int/powertrain/fuel.system/fuel.tanks/lt.fuel.tank/lf.tank.7.r:
53	2000	0	1	10	/compartment/hull/hull.int/powertrain/fuel.system/fuel.tanks/lt.fuel.tank/lt.tank.3.r:
54	2000	0	1	10	/compartment/hull/hull.int/powertrain/fuel.system/fuel.tanks/lt.fuel.tank/lt.tank.4.r:
55	2000	0	1	10	/compartment/hull/hull.int/powertrain/fuel.system/fuel.tanks/lt.fuel.tank/lt.tank.5.r:
56	2001	0	1	10	/compartment/hull/hull.int/powertrain/fuel.system/fuel.tanks/rt.fuel.tank/rt.tank.0.r:
57	2001	0	1	10	/compartment/hull/hull.int/powertrain/fuel.system/fuel.tanks/rt.fuel.tank/rt.tank.2.r:
58	2001	0	1	10	/compartment/hull/hull.int/powertrain/fuel.system/fuel.tanks/rt.fuel.tank/rt.tank.1.r:
45	2005	0	1	90	/compartment/hull/hull.int/powertrain/fuel.system/fuel.pump.r:
46	2006	0	5	100	/compartment/hull/hull.int/powertrain/fuel.system/fuel.filters/fuel.filter1.r:
47	2007	0	5	100	/compartment/hull/hull.int/powertrain/fuel.system/fuel.filters/fuel.filter2.r:
61	2008	0	1	11	/compartment/hull/hull.int/powertrain/fuel.system/fuel.manifolds:
42	2010	0	1	7	/compartment/hull/hull.int/powertrain/fuel.system/fuel.lines/fuelline.r:
43	2011	0	1	6	/compartment/hull/hull.int/powertrain/fuel.system/fuel.lines/fuel2inj.lt.r:
44	2012	0	1	6	/compartment/hull/hull.int/powertrain/fuel.system/fuel.lines/fuel2inj.rt.r:
59	2020	0	1	11	/compartment/hull/hull.int/powertrain/fuel.system/fuel.injectors/lt.fuel.inj.r:
60	2021	0	1	11	/compartment/hull/hull.int/powertrain/fuel.system/fuel.injectors/rt.fuel.inj.r:
465	3000	0	1	100	/compartment/turret/turret.ext/guns/main.gun/gun.barrel.r:
466	3001	0	1	100	/compartment/turret/turret.ext/guns/main.gun/breech.frt.r:
467	3002	0	1	100	/compartment/turret/turret.ext/guns/main.gun/gun.breech.r:
463	3110	0	1	100	/compartment/turret/turret.ext/guns/coax.mgun/coax.barrel.r:

REGION NUMBER	ID NUMBER	AIR CODE	MATERIAL CODE	EFFECTIVE PERCENTAGE	REGION NAME
464	3111	0	1	100	/compartment/turret/turret.ext/guns/coax.mgun/coax.receiver.r:
457	3200	0	3	100	/compartment/turret/turret.ext/guns/comm.mgun/cradle/mg.cradle1.r:
458	3201	0	3	100	/compartment/turret/turret.ext/guns/comm.mgun/cradle/mg.cradle2.r:
459	3202	0	3	100	/compartment/turret/turret.ext/guns/comm.mgun/cradle/mg.cradle3.r:
460	3202	0	3	100	/compartment/turret/turret.ext/guns/comm.mgun/cradle/mg.cradle4.r:
461	3205	0	1	100	/compartment/turret/turret.ext/guns/comm.mgun/cbrrl/mg.barrel.r:
462	3206	0	1	100	/compartment/turret/turret.ext/guns/comm.mgun/mg.receiver.r:
265	3300	0	1	100	/compartment/turret/turret.int/turret.ammo/cal50.upper.r:
99	3301	0	1	100	/compartment/hull/hull.int/hull.ammo/cal50.lower.r:
266	3303	0	1	100	/compartment/turret/turret.int/turret.ammo/7.62mm.box1.r:
100	3304	0	1	100	/compartment/hull/hull.int/hull.ammo/7.62mm.box2.r:
267	3305	0	1	100	/compartment/turret/turret.int/turret.ammo/grenade.boxes/grenade.box1.r:
268	3306	0	1	100	/compartment/turret/turret.int/turret.ammo/grenade.boxes/grenade.box2.r:
186	3307	0	1	100	/compartment/hull/hull.int/hull.ammo/cal45.box1.r:
312	3308	0	1	100	/compartment/turret/turret.int/turret.ammo/cal45.box2.r:
269	3310	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car1.r:
270	3311	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car2.r:
271	3312	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car3.r:
272	3313	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car4.r:
273	3314	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car5.r:
274	3315	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car6.r:
275	3316	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car7.r:
276	3317	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car8.r:
277	3318	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.catridges/tur.car9.r:
278	3319	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car10.r:
279	3320	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car11.r:
280	3321	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car12.r:
281	3322	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car13.r:
282	3323	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car14.r:
283	3324	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car15.r:
284	3325	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car16.r:
285	3326	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car17.r:
286	3327	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car18.r:
287	3328	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car19.r:
288	3329	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car20.r:
289	3330	0	23	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.cartridges/tur.car21.r:
101	3410	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car1.r:
102	3411	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car2.r:
103	3412	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car3.r:
104	3413	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car4.r:
105	3414	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car5.r:
106	3415	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car6.r:
107	3416	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car7.r:
108	3417	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car8.r:
109	3418	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car9.r:
110	3419	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car10.r:
111	3420	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car11.r:
112	3421	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car12.r:

REGION NUMBER	ID NUMBER	AIR CODE	MATERIAL CODE	EFFECTIVE PERCENTAGE	REGION NAME
113	3422	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car13.r:
114	3423	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car14.r:
115	3424	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car15.r:
116	3425	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car16.r:
117	3426	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car17.r:
118	3427	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car26.r:
119	3428	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car18.r:
120	3429	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car19.r:
121	3430	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car20.r:
122	3431	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car21.r:
123	3432	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car22.r:
124	3433	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car23.r:
125	3434	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car24.r:
126	3435	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.cartridges/hull.car25.r:
166	3510	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.cartridges/ready.car1.r:
167	3511	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.cartridges/ready.car2.r:
168	3512	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.cartridges/ready.car3.r:
169	3513	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.cartridges/ready.car4.r:
170	3514	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.cartridges/ready.car5.r:
171	3515	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.cartridges/ready.car6.r:
172	3516	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.cartridges/ready.car7.r:
173	3517	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.cartridges/ready.car8.r:
174	3518	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.cartridges/ready.car9.r:
175	3519	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.cartridges/ready.car10.r:
176	3520	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.cartridges/ready.car11.r:
177	3521	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.cartridges/ready.car12.r:
178	3522	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.cartridges/ready.car13.r:
179	3600	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ammo.platform/plat.cart1.r:
181	3601	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ammo.platform/plat.cart2.r:
183	3603	0	23	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ammo.platform/plat.cart3.r:
180	3606	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ammo.platform/plat.projo1.r:
182	3607	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ammo.platform/plat.projo2.r:
184	3608	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ammo.platform/plat.projo3.r:
127	3610	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj1.r:
128	3611	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj2.r:
129	3612	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj3.r:
130	3613	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj4.r:
131	3614	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj5.r
132	3615	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj6.r:
133	3616	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj7.r:
134	3617	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj8.r:
135	3618	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj9.r:
136	3619	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj10.r:
137	3620	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj11.r:
138	3621	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj12.r:
139	3622	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj13.r:
140	3623	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj14.r:
141	3624	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj15.r:

REGION NUMBER	ID NUMBER	AIR CODE	MATERIAL CODE	EFFECTIVE PERCENTAGE	REGION NAME
142	3625	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj16.r:
143	3626	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj17.r:
144	3627	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj18.r:
145	3628	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj19.r:
146	3629	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj20.r:
147	3630	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj21.r:
148	3631	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj22.r:
149	3632	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj23.r:
150	3633	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj24.r:
151	3634	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj25.r:
152	3635	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/hull.projectiles/hull.proj26.r:
290	3710	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/tur.proj1.r:
291	3711	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/tur.proj2.r:
292	3712	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/tur.proj3.r:
293	3713	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/tur.proj4.r:
294	3714	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/tur.proj5.r:
295	3715	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/tur.proj6.r:
296	3716	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/tur.proj7.r:
297	3717	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/tur.proj8.r:
298	3718	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/tur.proj9.r:
299	3719	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/ tur.proj10.r:
300	3720	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/ tur.proj11.r:
301	3721	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/ tur.proj12.r:
302	3722	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/ tur.proj13.r:
303	3723	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/ tur.proj14.r:
304	3724	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/ tur.proj15.r:
305	3725	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/ tur.proj16.r:
306	3726	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/ tur.proj17.r:
307	3727	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/ tur.proj18.r:
308	3728	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/ tur.proj19.r:
309	3729	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/ tur.proj20.r:
310	3730	0	24	100	/compartment/turret/turret.int/turret.ammo/turret.105mm/tur.projectiles/ tur.proj21.r:
153	3810	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.projos/ready.proj1.r:
154	3811	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.projos/ready.proj2.r:
155	3812	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.projos/ready.proj3.r:
156	3813	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.projos/ready.proj4.r:

REGION NUMBER	ID NUMBER	AIR CODE	MATERIAL CODE	EFFECTIVE PERCENTAGE	REGION NAME
157	3814	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.projos/ready.proj5.r:
158	3815	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.projos/ready.proj6.r:
159	3816	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.projos/ready.proj7.r:
160	3817	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.projos/ready.proj8.r:
161	3818	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.projos/ready.proj9.r:
162	3819	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.projos/ready.proj10.r:
163	3820	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.projos/ready.proj11.r:
164	3821	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.projos/ready.proj12.r:
165	3822	0	24	100	/compartment/hull/hull.int/hull.ammo/hull.105mm/ready.projos/ready.proj13.r:
185	3850	0	1	100	/compartment/hull/hull.int/hull.ammo/gunner.mg.r:
311	3855	0	1	100	/compartment/turret/turret.int/turret.ammo/turret.mg.r:
211	3900	0	1	100	/compartment/hull/hull.int/hull.ammo/hull.ammo.holder/lt.frnt.hull.r:
212	3901	0	1	100	/compartment/hull/hull.int/hull.ammo/ammo.holder/rt.frnt.hull.r:
213	3902	0	1	100	/compartment/hull/hull.intt/hull.ammo/hull.ammo.holder/lt.mid.hull.r:
361	3910	0	1	100	/compartment/turret/turret.int/tur.ammo/tur.ammo.holder/tur.rear1.r:
362	3911	0	1	100	/compartment/turret/turret.int/tur.ammo/tur.ammo.holder/tur.rear.r:
69	4000	0	1	50	/compartment/hull/hull.int/powertrain/engine/cylinder/rt.cylinder.r:
71	4001	0	1	50	/compartment/hull/hull.int/powertrain/engine/cylinder/rt.cyl.head.r:
75	4003	0	1	20	/compartment/hull/hull.int/powertrain/engine/engine.block.r:
72	4004	0	1	50	/compartment/hull/hull.int/powertrain/engine/cylinder/lt.cylinder.r:
70	4005	0	1	50	/compartment/hull/hull.int/powertrain/engine/cylinder/lt.cyl.head.r:
73	4010	0	1	100	/compartment/hull/hull.int/powertrain/engine/camshafts/rt.camshaft.r:
74	4011	0	1	100	/compartment/hull/hull.int/powertrain/engine/camshafts/lt.camshaft.r:
76	4020	0	1	29	/compartment/hull/hull.int/powertrain/engine/governor.r:
77	4100	0	1	21	/compartment/hull/hull.int/powertrain/turbochargers/lt.turbo.r:
79	4105	0	1	20	/compartment/hull/hull.int/powertrain/turbochargers/exh.manifold.r:
78	4110	0	1	100	/compartment/hull/hull.int/powertrain/turbochargers/rt.turbo.r:
80	4115	0	12	100	/compartment/hull/hull.int/powertrain/turbochargers/air.cleaners/lt.cleaner.r:
81	4116	0	12	100	/compartment/hull/hull.int/powertrain/turbochargers/air.cleaners/rt.cleaner.r:
82	4117	0	12	100	/compartment/hull/hull.int/powertrain/turbochargers/air.cleaners/air.lines.r:
62	4300	0	1	20	/compartment/hull/hull.int/powertrain/oil.system/oil.filters.r:
63	4310	0	1	6	/compartment/hull/hull.int/powertrain/oil.system/oil.lines.r:
64	4311	0	7	6	/compartment/hull/hull.int/powertrain/oil.system/eng.oil.rad/lt.oil.rad.r:
65	4312	0	1	100	/compartment/hull/hull.int/powertrain/oil.system/eng.oil.rad/rt.oil.rad.r:
66	4315	0	1	6	/compartment/hull/hull.int/powertrain/oil.system/trans.oil.line.r:
67	4400	0	1	18	/compartment/hull/hull.int/powertrain/cooling.system/fan.shaft.r:
68	4401	0	1	18	/compartment/hull/hull.int/powertrain/cooling.system/cooling.fans.r:
83	4500	0	1	50	/compartment/hull/hull.int/drivetrain/transmission/trans.shifter/trans.shft1.r:
84	4501	0	1	50	/compartment/hull/hull.int/drivetrain/transmission/trans.shifter/trans.shft2.r:
85	4510	0	1	100	/compartment/hull/hull.int/drivetrain/transmission/cool.fan.shft/fan.shft.0.r:
86	4511	0	1	100	/compartment/hull/hull.int/drivetrain/transmission/cool.fan.shft/fan.shft.1.r:
87	4512	0	1	100	/compartment/hull/hull.int/drivetrain/transmission/cool.fan.shft/fan.shft.2.r:
88	4513	0	1	100	/compartment/hull/hull.int/drivetrain/transmission/cool.fan.shft/an.shft.3.r:
89	4514	0	1	100	/compartment/hull/hull.int/drivetrain/transmission/cool.fan.shft/fan.shft.4.r:
90	4520	0	1	80	/compartment/hull/hull.int/drivetrain/transmission/trans.conn.r:
91	4521	0	7	6	/compartment/hull/hull.int/drivetrain/transmission/trans.cooler.r:
92	4524	0	1	60	/compartment/hull/hull.int/drivetrain/transmission/trans.cntrl.ser:
93	4530	0	1	80	/compartment/hull/hull.int/drivetrain/transmission/trans.case.r:

REGION NUMBER	ID NUMBER	AIR CODE	MATERIAL CODE	EFFECTIVE PERCENTAGE	REGION NAME
94	4550	0	1	100	/compartment/hull/hull.int/drivetrain/univer.joints.r:
95	4600	0	1	50	/compartment/hull/hull.int/drivetrain/drivercontrols/steer.cntrl.r:
96	4601	0	1	50	/compartment/hull/hull.int/drivetrain/drivercontrols/brake.cntrl.r:
97	4602	0	1	50	/compartment/hull/hull.int/drivetrain/drivercontrols/throttle.cntrl/thr.cntrl1.r:
98	4603	0	1	50	/compartment/hull/hull.int/drivetrain/drivercontrols/throttle.cntrl/thr.cntrl2.r:
510	5000	0	1	100	/compartment/suspension/track/lt.track.r:
511	5001	0	1	100	/compartment/suspension/track/rt.track.r:
468	5010	0	18	100	/compartment/suspension/rollers/lt.rollers/lt1.roller/lt1.rol.tire.r:
469	5011	0	1	49	/compartment/suspension/rollers/lt.rollers/lt1.roller/lt1.rol.rim.r:
470	5012	0	1	100	/compartment/suspension/rollers/lt.rollers/lt1.roller/lt1.rol.flg.r:
471	5013	0	1	100	/compartment/suspension/rollers/lt.rollers/lt1.roller/lt1.rol.hub.r:
495	5015	0	1	100	/compartment/suspension/rollers/lt.roller.arms/lt1.rol.arm.r:
472	5020	0	18	100	/compartment/suspension/rollers/lt.rollers/lt2.roller/lt2.rol.tire.r:
473	5021	0	1	49	/compartment/suspension/rollers/lt.rollers/lt2.roller/lt2.rol.rim.r:
474	5022	0	1	100	/compartment/suspension/rollers/lt.rollers/lt2.roller/lt2.rol.flg.r:
475	5023	0	1	100	/compartment/suspension/rollers/lt.rollers/lt2.roller/lt2.rol.hub.r:
496	5025	0	1	100	/compartment/suspension/rollers/lt.roller.arms/lt2.rol.arm.r:
476	5030	0	18	100	/compartment/suspension/rollers/lt.rollers/lt3.roller/lt3.rol.tire.r:
477	5031	0	1	49	/compartment/suspension/rollers/lt.rollers/lt3.roller/lt3.rol.rim.r:
478	5032	0	1	100	/compartment/suspension/rollers/lt.rollers/lt3.roller/lt3.rol.flg.r:
479	5033	0	1	100	/compartment/suspension/rollers/lt.rollers/lt3.roller/lt3.rol.hub.r:
497	5035	0	1	100	/compartment/suspension/rollers/lt.roller.arms/lt3.rol.arm.r:
480	5110	0	18	100	/compartment/suspension/rollers/rt.rollers/rt1.roller/rt1.rol.tire.r:
481	5111	0	1	49	/compartment/suspension/rollers/rt.rollers/rt1.roller/rt1.rol.rim.r:
482	5112	0	1	100	/compartment/suspension/rollers/rt.rollers/rt1.roller/rt1.rol.flg.r:
483	5113	0	1	100	/compartment/suspension/rollers/rt.rollers/rt1.roller/rt1.rol.hub.r:
492	5115	0	1	100	/compartment/suspension/rollers/rt.roller.arms/rt1.rol.arm.r:
484	5120	0	18	100	/compartment/suspension/rollers/rt.rollers/rt2.roller/rt2.rol.tire.r:
485	5121	0	1	49	/compartment/suspension/rollers/rt.rollers/rt2.roller/rt2.rol.rim.r:
486	5122	0	1	100	/compartment/suspension/rollers/rt.rollers/rt2.roller/rt2.rol.flg.r:
487	5123	0	1	100	/compartment/suspension/rollers/rt.rollers/rt2.roller/rt2.rol.hub.r:
493	5125	0	1	100	/compartment/suspension/rollers/rt.roller.arms/rt2.rol.arm.r:
488	5130	0	18	100	/compartment/suspension/rollers/rt.rollers/rt3.roller/rt3.rol.tire.r:
489	5131	0	1	49	/compartment/suspension/rollers/rt.rollers/rt3.roller/rt3.rol.rim.r:
490	5132	0	1	100	/compartment/suspension/rollers/rt.rollers/rt3.roller/rt3.rol.flg.r:
491	5133	0	1	100	/compartment/suspension/rollers/rt.rollers/rt3.roller/rt3.rol.hub.r:
494	5135	0	1	100	/compartment/suspension/rollers/rt.roller.arms/rt3.rol.arm.r:
498	5200	0	18	100	/compartment/suspension/idler/lt.idler/lt.id.tire.r:
499	5201	0	1	49	/compartment/suspension/idler/lt.idler/lt.id.rim.r:
500	5202	0	1	100	/compartment/suspension/idler/lt.idler/lt.id.flange.r:
501	5203	0	1	100	/compartment/suspension/idler/lt.idler/lt.idler.hub.r:
502	5204	0	1	100	/compartment/suspension/idler/lt.idler/lt.idler.arm.r:
503	5205	0	1	100	/compartment/suspension/idler/lt.idler/lt.id.arm.adt.r:
504	5210	0	18	100	/compartment/suspension/idler/rt.idler/rt.id.tire.r:
505	5211	0	1	49	/compartment/suspension/idler/rt.idler/rt.id.rim.r:
506	5212	0	1	100	/compartment/suspension/idler/rt.idler/rt.id.flange.r:
507	5213	0	1	100	/compartment/suspension/idler/rt.idler/rt.idler.hub.r:
508	5214	0	1	100	/compartment/suspension/idler/rt.idler/rt.idler.arm.r:

REGION NUMBER	ID NUMBER	AIR CODE	MATERIAL CODE	EFFECTIVE PERCENTAGE	REGION NAME
509	5215	0	1	100	/compartment/suspension/idler/rt.idler/rt.id.arm.adt.r:
603	5230	0	1	100	/compartment/suspension/final.drive/rt.final.drive/rt.spr.rim.r:
604	5231	0	1	100	/compartment/suspension/final.drive/rt.final.drive/rt.sprocket.r:
605	5232	0	1	100	/compartment/suspension/final.drive/rt.final.drive/rt.spr.hub.r:
606	5233	0	1	100	/compartment/suspension/final.drive/rt.final.drive/rt.spr.connt.r:
607	5240	0	1	100	/compartment/suspension/final.drive/lt.final.drive/lt.spr.rim.r:
608	5241	0	1	100	/compartment/suspension/final.drive/lt.final.drive/lt.sprocket.r:
609	5242	0	1	100	/compartment/suspension/final.drive/lt.final.drive/lt.spr.hub.r:
610	5243	0	1	100	/compartment/suspension/final.drive/lt.final.drive/lt.spr.connt.r:
572	5250	0	1	100	/compartment/suspension/shocks/right.shock/rt.sh.1whl.r:
573	5251	0	1	100	/compartment/suspension/shocks/right.shock/rt.sh.2whl.r:
574	5252	0	1	100	/compartment/suspension/shocks/right.shock/rt.sh.6whl.r:
575	5260	0	1	100	/compartment/suspension/shocks/left.shock/lt.sh.1whl.r:
576	5261	0	1	100	/compartment/suspension/shocks/left.shock/lt.sh.2whl.r:
577	5262	0	1	100	/compartment/suspension/shocks/left.shock/lt.sh.6whl.r:
537	5300	0	18	100	/compartment/suspension/roadwheels/left.rdwhl/lt1.rdwhl/lt1.tire.r:
538	5301	0	1	49	/compartment/suspension/roadwheels/left.rdwhl/lt1.rdwhl/lt1.rim.r:
539	5302	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt1.rdwhl/lt1.flg.r:
540	5303	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt1.rdwhl/lt1.hub.r:
541	5304	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt1.rdwhl/lt1.arm.r:
584	5306	0	1	100	/compartment/suspension/torsionbars/lt.torsion.bar/lt1.torbar.r:
597	5307	0	1	100	/compartment/suspension/torsionbars/lt.torsion.arms/lt1.tor.arm.r:
512	5310	0	18	100	/compartment/suspension/roadwheels/left.rdwhl/lt2.rdwhl/lt2.tire.r:
513	5311	0	1	49	/compartment/suspension/roadwheels/left.rdwhl/lt2.rdwhl/lt2.rim.r:
514	5312	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt2.rdwhl/lt2.flg.r:
515	5313	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt2.rdwhl/lt2.hub.r:
516	5314	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt2.rdwhl/lt2.arm.r:
585	5316	0	1	100	/compartment/suspension/torsionbars/lt.torsion.bar/lt2.torbar.r:
598	5317	0	1	100	/compartment/suspension/torsionbars/lt.torsion.arms/lt2.tor.arm.r:
517	5320	0	18	100	/compartment/suspension/roadwheels/left.rdwhl/lt3.rdwhl/lt3.tire.r:
518	5321	0	1	49	/compartment/suspension/roadwheels/left.rdwhl/lt3.rdwhl/lt3.rim.r:
519	5322	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt3.rdwhl/lt3.flg.r:
520	5323	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt3.rdwhl/lt3.hub.r:
521	5324	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt3.rdwhl/lt3.arm.r:
586	5326	0	1	100	/compartment/suspension/torsionbars/lt.torsion.bar/lt3.torbar.r:
599	5327	0	1	100	/compartment/suspension/torsionbars/lt.torsion.arms/lt3.tor.arm.r:
522	5330	0	18	100	/compartment/suspension/roadwheels/left.rdwhl/lt4.rdwhl/lt4.tire.r:
523	5331	0	1	49	/compartment/suspension/roadwheels/left.rdwhl/lt4.rdwhl/lt4.rim.r:
524	5332	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt4.rdwhl/lt4.flg.r:
525	5333	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt4.rdwhl/lt4.hub.r:
526	5334	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt4.rdwhl/lt4.arm.r:
587	5336	0	1	100	/compartment/suspension/torsionbars/lt.torsion.bar/lt4.torbar.r:
600	5337	0	1	100	/compartment/suspension/torsionbars/lt.torsion.arms/lt4.tor.arm.r:
527	5340	0	18	100	/compartment/suspension/roadwheels/left.rdwhl/lt5.rdwhl/lt5.tire.r:
528	5341	0	1	49	/compartment/suspension/roadwheels/left.rdwhl/lt5.rdwhl/lt5.rim.r:
529	5342	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt5.rdwhl/lt5.flg.r:
530	5343	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt5.rdwhl/lt5.hub.r:
531	5344	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt5.rdwhl/lt5.arm.r:

REGION NUMBER	ID NUMBER	AIR CODE	MATERIAL CODE	EFFECTIVE PERCENTAGE	REGION NAME
588	5346	0	1	100	/compartment/suspension/torsionbars/lt.torsion.bar/lt5.torbar.r:
601	5347	0	1	100	/compartment/suspension/torsionbars/lt.torsion.arms/lt5.tor.arm.r:
532	5350	0	18	100	/compartment/suspension/roadwheels/left.rdwhl/lt6.rdwhl/lt6.tire.r:
533	5351	0	1	49	/compartment/suspension/roadwheels/left.rdwhl/lt6.rdwhl/lt6.rim.r:
534	5352	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt6.rdwhl/lt6.flg.r:
535	5353	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt6.rdwhl/lt6.hub.r:
536	5354	0	1	100	/compartment/suspension/roadwheels/left.rdwhl/lt6.rdwhl/lt6.arm.r:
589	5356	0	1	100	/compartment/suspension/torsionbars/lt.torsion.bar/lt6.torbar.r:
602	5357	0	1	100	/compartment/suspension/torsionbars/lt.torsion.arms/lt6.tor.arm.r:
542	5400	0	18	100	/compartment/suspension/roadwheels/right.rdwhl/rt1.rdwhl/rt1.tire.r:
543	5401	0	1	49	/compartment/suspension/roadwheels/right.rdwhl/rt1.rdwhl/rt1.rim.r:
544	5402	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt1.rdwhl/rt1.flg.r:
545	5403	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt1.rdwhl/rt1.hub.r:
546	5404	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt1.rdwhl/rt1.arm.r:
578	5406	0	1	100	/compartment/suspension/torsionbars/rt.torsion.bar/rt1.torbar.r:
591	5407	0	1	100	/compartment/suspension/torsionbars/rt.torsion.arms/rt1.tor.arm.r:
551	5410	0	18	100	/compartment/suspension/roadwheels/right.rdwhl/rt2.rdwhl/rt2.tire.r:
547	5411	0	1	49	/compartment/suspension/roadwheels/right.rdwhl/rt2.rdwhl/rt2.rim.r:
548	5412	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt2.rdwhl/rt2.flg.r:
549	5413	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt2.rdwhl/rt2.hub.r:
550	5414	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt2.rdwhl/rt2.arm.r:
579	5416	0	1	100	/compartment/suspension/torsionbars/rt.torsion.bar/rt2.torbar.r:
592	5417	0	1	100	/compartment/suspension/torsionbars/rt.torsion.arms/rt2.tor.arm.r:
552	5420	0	18	100	/compartment/suspension/roadwheels/right.rdwhl/rt3.rdwhl/rt3.tire.r:
553	5421	0	1	49	/compartment/suspension/roadwheels/right.rdwhl/rt3.rdwhl/rt3.rim.r:
554	5422	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt3.rdwhl/rt3.flg.r:
555	5423	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt3.rdwhl/rt3.hub.r:
556	5424	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt3.rdwhl/rt3.arm.r:
580	5426	0	1	100	/compartment/suspension/torsionbars/rt.torsion.bar/rt3.torbar.r:
593	5427	0	1	100	/compartment/suspension/torsionbars/rt.torsion.arms/rt3.tor.arm.r:
557	5430	0	18	100	/compartment/suspension/roadwheels/right.rdwhl/rt4.rdwhl/rt4.tire.r:
558	5431	0	1	49	/compartment/suspension/roadwheels/right.rdwhl/rt4.rdwhl/rt4.rim.r:
559	5432	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt4.rdwhl/rt4.flg.r:
560	5433	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt4.rdwhl/rt4.hub.r:
561	5434	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt4.rdwhl/rt4.arm.r:
581	5436	0	1	100	/compartment/suspension/torsionbars/rt.torsion.bar/rt4.torbar.r:
594	5437	0	1	100	/compartment/suspension/torsionbars/rt.torsion.arms/rt4.tor.arm.r:
562	5440	0	18	100	/compartment/suspension/roadwheels/right.rdwhl/rt5.rdwhl/rt5.tire.r:
563	5441	0	1	49	/compartment/suspension/roadwheels/right.rdwhl/rt5.rdwhl/rt5.rim.r:
564	5442	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt5.rdwhl/rt5.flg.r:
565	5443	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt5.rdwhl/rt5.hub.r:
566	5444	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt5.rdwhl/rt5.arm.r:
582	5446	0	1	100	/compartment/suspension/torsionbars/rt.torsion.bar/rt5.torbar.r:
595	5447	0	1	100	/compartment/suspension/torsionbars/rt.torsion.arms/rt5.tor.arm.r:
567	5450	0	18	100	/compartment/suspension/roadwheels/right.rdwhl/rt6.rdwhl/rt6.tire.r:
568	5451	0	1	49	/compartment/suspension/roadwheels/right.rdwhl/rt6.rdwhl/rt6.rim.r:
569	5452	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt6.rdwhl/rt6.flg.r:
570	5453	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt6.rdwhl/rt6.hub.r:

REGION NUMBER	ID NUMBER	AIR CODE	MATERIAL CODE	EFFECTIVE PERCENTAGE	REGION NAME
571	5454	0	1	100	/compartment/suspension/roadwheels/right.rdwhl/rt6.rdwhl/rt6.arm.r:
583	5456	0	1	100	/compartment/suspension/torsionbars/rt.torsion.bar/rt6.torbar.r:
596	5457	0	1	100	/compartment/suspension/torsionbars/rt.torsion.arms/rt6.tor.arm.r:
590	5500	0	1	100	/compartment/suspension/torsionbars/torbar.cover.r:
193	6000	0	1	90	/compartment/hull/hull.int/hull.electrical/hull.elec/starter.r:
194	6001	0	1	90	/compartment/hull/hull.int/hull.electrical/hull.elec/generator.r:
195	6002	0	8	7	/compartment/hull/hull.int/hull.electrical/hull.elec/batteries.r:
197	6003	0	1	20	/compartment/hull/hull.int/hull.electrical/hull.elec/gage.panel.r:
201	6004	0	5	100	/compartment/hull/hull.int/hull.electrical/hull.elec/starter.relay.r:
198	6005	0	1	20	/compartment/hull/hull.int/hull.electrical/hull.elec/ir.powerpack.r:
207	6006	0	1	100	/compartment/hull/hull.int/hull.electrical/hull.elec/gen.contrl.box,r:
199	6007	0	1	30	/compartment/hull/hull.int/hull.electrical/hull.elec/master.cntrl.r:
202	6008	0	1	30	/compartment/hull/hull.int/hull.electrical/hull.elec/tur.pwr.relay.r:
203	6009	0	1	20	/compartment/hull/hull.int/hull.electrical/hull.elec/master.relay.r:
200	6015	0	1	100	/compartment/hull/hull.int/hull.electrical/hull.elec/slip.ring.r:
196	6050	0	1	100	/compartment/hull/hull.int/hull.electrical/hull.elec/elec.cable.r:
204	6100	0	1	30	/compartment/hull/hull.int/hull.electrical/hull.elec/powerpack/powepack.mot.r:
205	6101	0	21	86	/compartment/hull/hull.int/hull.electrical/hull.elec/powerpack/prpack.tank..r:
206	6102	0	1	20	/compartment/hull/hull.int/hull.electrical/hull.elec/powerpack/accumulator.r:
208	6250	0	5	75	/compartment/hull/hull.int/hull.electrical/dr.inter.r:
331	6500	0	1	100	/compartment/turret/turret.int/tur.electrical/tur.elec/tur.cables.r:
332	6501	0	1	40	/compartment/turret/turret.int/tur.electrical/tur.elec/ventil.mot.r:
333	6600	0	1	100	/compartment/turret/turret.int/tur.electrical/cupola.elec/cpnl.asmbly.r:
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357	6702	0	5	75	/compartment/turret/turret.int/tur.electrical/tur.commo/radios/radio3.r:
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41	7000	0	17	100	/compartment/hull/hull.int/h.firecontrol/dr.peri.r:
371	7500	0	17	100	/compartment/turret/turret.int/firecontrol/periscopes/ldr.peri.r:
370	7510	0	17	100	/compartment/turret/turret.int/firecontrol/periscopes/gun.peri.r:
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